WHAT IS CLAIMED IS:

1. A method for calculating a movement value of an optical mouse comprising the steps of:

calculating a movement value, wherein the step of calculating the movement value selects a reference frame, setting a reference area from the reference frame, and finds a correlation between a current input frame and the reference area of the reference frame; and

resetting a reference area, wherein the step of resetting the reference area sets a new reference area to which the reference area of the reference frame is moved by considering the movement value calculated in the step of calculating the movement value.

2. The method according to claim 1, wherein when the movement value is calculated as being moved m (where m is an integer) pixel in the X direction and n (where n is an integer) pixel in the Y direction, the step of resetting the reference area sets an area to which the reference area of the reference frame is moved -p (where p is an integer) pixel in the X direction and -q (where q is an integer) pixel in the Y direction as the new reference area.

3. The method according to claim 2, wherein an absolute value of m is larger than or equal to an absolute value of p and an absolute value of n is larger than or equal to an absolute value of q, m and p have not a sign which is different from each other, and n and q have not a sign which is different from

each other.

4. A method for calculating a movement value of an optical mouse comprising the steps of:

adjusting a reference frame update speed based on a movement speed of the optical mouse and updating the reference frame;

calculating a first movement value, wherein the step of calculating the first movement value sets a reference area in the updated reference frame, and finds a correlation between a current input frame and the reference area of the reference frame to calculate the movement value; and

resetting a reference area, wherein the step of resetting a reference area sets a new reference frame to which the reference area of the reference frame is moved by considering the calculated movement value according to the adjusted reference frame update speed.

5. The method of claim 4, wherein the step of updating the reference frame comprises the steps of:

maintaining the adjusted reference frame update speed when the movement value calculated through the step of calculating the movement value is neither smaller nor larger than an estimated value corresponding to the adjusted reference frame speed,

reducing the reference frame update speed when the calculated movement value of the optical mouse is smaller than the estimated value, and

increasing the reference frame update speed when the calculated

movement value of the optical mouse is larger than the estimated value.

6. The method of claim 5, wherein the estimated value is set to an average value of previous movement values.

7. The method of claim 5, wherein in the step of calculating the movement value, when the movement value is calculated as being moved m (where m is an integer) pixel in the X direction and n (where n is an integer) pixel in the Y direction, the step of resetting the reference area sets an area to which the reference area of the reference frame is moved -p (where p is an integer) pixel in the X direction and -q (where q is an integer) pixel in the Y direction as a new reference area.

8. The method according to claim 7, wherein an absolute value of m is larger than or equal to an absolute value of p and an absolute value of n is larger than or equal to an absolute value of q, m and p have not a sign which is different from each other, and n and q have not a sign which is different from each other.

9. An optical mouse comprising:

an image sensor that obtains a surface image of a sample frame and outputs the surface image in pixel;

an A/D converter that receives an output of the image sensor and converts the output to a digital signal; and

an image data processor that finds a correlation between a sample frame and the reference area of a reference frame to calculate a movement value and sets a new reference area to which the reference area of the reference frame is moved by considering the calculated movement value.

10. The optical mouse according to claim 9, wherein when the movement value is calculated as being moved m (where m is an integer) pixel in the X direction and n (where n is an integer) pixel in the Y direction, the image data processor resets an area to which the reference area of the reference frame is moved -p (where p is an integer) pixel in the X direction and -q (where q is an integer) pixel in the Y direction as the new reference area.

11. The optical mouse according to claim 10, wherein an absolute value of m is larger than or equal to an absolute value of p and an absolute value of n is larger than or equal to an absolute value of q, m and p have not a sign which is different from each other, and n and q have not a sign which is different from each other.

12. The optical mouse according to claim 9, wherein the image data processor sets the reference frame update speed based on the movement speed of the optical mouse, and in updating a first frame, updates the reference frame, and in updating a second frame, sets the new reference frame to which the reference area of the reference frame is moved by considering in previous movement values.

13. The optical mouse according to claim 9, wherein the image data processor

maintains the adjusted reference frame update speed when the calculated movement value is neither smaller nor larger than an estimated value corresponding to the adjusted reference frame speed, reduces the reference frame update speed when the calculated movement value of the optical mouse is smaller than the estimated value, and increases the reference frame update speed when the calculated movement value of the optical mouse is larger than the estimated value.

14. The optical mouse of claim 13, wherein the estimated value is set to an average value of previous movement values.